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Introduction

The most common findings in the extant research are that small and medium-size enterprises (SMEs) encounter external finance constraints, a topic of significant research interest for academics and policy makers' world over. Therefore, it is not much of surprise that the research over the last half of the century, on small and medium-size enterprises, tended to focus on the causes and consequences of finance constraint. This study, whilst recognising and acknowledging the importance of SMEs nationally and globally, argues that a narrow focus on supply side institutions, information asymmetry and consequently a reliance on collateral to minimise default risk, over simplifies the core issue of access to finance for SMEs by failing to take account of financial literacy. We argue that the current reductionist approach overlooks the importance of financial literacy at large and the key skills amongst SMEs owner/managers that limit their ability to understand and justify the need for external of finance. Thus, the paper investigates and analyses the role of financial knowledge to improve access to finance and examines the application of financial literacy when accessing external finance and regarding the growth of firms.

The literature recognises that small business enterprises contribute towards economic development, a cohesive and progressive economic structure (Hussain and Matlay, 2007) that helps to unlock national and global markets (Pickernell *et al., 2016*) Therefore, it is not a surprise that the size and diversity of small enterprises has been the focal point of researchers since their prominence in the 1960s (Hussain *et al.,* 2006*;* Stanworth and Gray, 1991; Storey, 1994; Bank of England, 1999). Even before the 1960s, Small and Medium Sized Enterprises (SMEs) have been recognised as essential structures to promote wealth creation and employment for western economies and they play a critical role for development (Simmons *et al., 2008;* Singh and Janor, 2013). The presence of SMEs is more visible in emerging economies (Mishra, 2006) as they make a significant contribution towards innovation, employment and gross domestic product (Carrer and Klomp, 1996). Since the 1980s, a plethora of studies (Forsman, 2011; McKeever *et al., 2014*) and government policy reports (for example, GEM, 2014) have advocated support for SMEs to enhance their economic prospects and also to mitigate the impact of cyclical crisis.

SMEs are inherently agile, rapidly respond to changes and adapt to innovation (Audretsch *et al., 2009*; Carter and Jones-Evans, 2006). The innovative nature of SMEs (Fuellhart and Glasmeier, 2003; Maxwell and Stone, 2004) complements large firms as they are crucial for prosperous economies (Beck and Demirguc-Kunt, 2006; Salavou *et al., 2004)*. However, the importance of SMEs is often over looked in emerging economies (Samujh, 2011) whereas in developed economies, such as the UK, the role and importance of SMEs have been acknowledged since the MacMillan Committee report in 1931, especially issues related to access to finance, and later by (Hamilton and Fox, 1998). The government (mainly for political reasons) and academics continue to assert that there exists the 'MacMillan Gap' (Story, 1994) - the inability to raise adequate capital to operate efficiently, which constrains SMEs' start-up, growth and innovation. This 'gap' is attributed often to the supply side's reluctance to lend due to a high risk of default.

Despite the adversities of access to finance, in the case of the UK, according to the Federation of Small Business survey in 2016, SMEs accounted for 99.9% of all private businesses, over 60% of employment and had a turnover of more than 47%; a trend which is observed in most developed economies. With this backdrop, it is not surprising that SMEs are the dominant entities world over (Kheng and Minai, 2016). Considering the importance of SMEs, there is a major preoccupation amongst policy makers, entrepreneurs, governments and academics about the access to finance for start-ups and the growth of SMEs in the UK. However, existing studies have often over looked the lack of financial knowledge, skill sets and literacy that may impede their success when seeking bank finance. This paper builds on the existing research by examining how financial literacy moderates access to external finance and its implications for firms' growth and the lessons that can be learnt for both developed and emerging economies.

In the UK and the world over the failure rate amongst SMEs is high; this is attributable to a sub-optimal capital structure that is often due to a reluctance on the part of external finance providers to lend due to asymmetric information that gives rise to high risk. Absence or limited availability of adequate financial information restricts debt providers to adequately assess risk, leading them to make an adverse lending decision (Ackerlof, 1970). To mitigate information asymmetry, lenders often seek collateral (Imronudin and Hussain, 2016; Cowling *et al.,* 2016; Deakin and Hussain, 1994; Fletcher, 1995) and set higher charges (Berger and Udell, 1995). Therefore, to improve the quality of financial information to aid effective financial decision-making, there is a need for enhanced financial literacy to enable SMEs' owners/managers to prepare relevant, timely financial information to enable lenders to analyse and make effective financial decisions. The issue is further complicated by a restructuring of the financial environment due to technological and regulatory influences; this led to a decline in relational lending. In addition, banks have relocated their Head Quarters and this also negatively impacted on SMEs' access to finance as the distance of the business from the banks' Head Quarters is positively related (Lee and Brown, 2014). Insufficient collateral is another factor that limits SMEs' access to finance that could cause business failure (Love *et al.,* 2016).

SMEs in general are characterised by poor financial and managerial knowledge and financial training that affects their access to external finance (Carbó-Valverde *et al.,* 2016) that skills negatively impact on SMEs' chances of survival, growth and innovation. It is reported that (Fraser *et al.*, 2015), a scarceness of financial management skills is correlated with firms' access to finance that adversely impacts firms' ability to access optimal debt and equity, that leads towards bankruptcy (Hatten, 2016). To mitigate risk and to optimise SMEs' potential, it is suggested access to finance be improved as that will have a positive influence on firms' survival and growth (Storey, 1994). This relationship reinforces the need to enhance financial literacy amongst SMEs to minimise the barrier to access external finance. However, the question remains whether promoting financial literacy reduces the information asymmetry that enables financial institutions to make better informed lending decisions. Furthermore, what is the relationship between financial literacy, access to finance and SMEs' growth? These are important policy questions that the previous literature has not yet comprehensively provided answers to, but which this study seeks to answer.

The objective of the research is to review the literature and to conduct surveys to examine a) the importance of financial literacy, b) measure the level of financial literacy amongst, recent start-ups and established firms, and c) ascertain the relationship between financial literacy, access to finance and the growth of a firm.

The study based on the above objectives makes the following contributions to the existing literature. Firstly, using a qualitative approach, it provides evidence on the relationship between financial literacy and access to finance; it provides some answers as to whether there is a positive relationship between increasing financial literacy and access to finance; and thirdly, it discusses whether financial literacy improves the growth potential of SMEs.

Literature review

Research suggests that financial resources are a pre-requisite for all enterprises to initiate, sustain and grow (Carpenter and Peterson, 2002). Since the UK Macmillan Commission report of 1931, a plethora of studies were carried out to assess the 'finance gap' associated with SME's. To address the causes of the finance gap, an understanding and application of financial management is an important factor (Vanacker and Manigart, 2010), something that is interconnected with financial literacy, especially for high growth SMEs. However, little is investigated or known about the relationship between financial literacy, its impact on access to finance and firm growth. Responses to financial illiteracy have emanated from a range of sources in the UK (Rosacker and Rosacker, 2016; Adomaka *et al.,* 2016; Hussain *et al.,* 2006; 2008). However, there has been limited exploration of the role of financial literacy and its impact on entrepreneurs' behaviour, conduct and the related outcomes. However, it is acknowledged that financial skills and literacy enable managers to make strategic investments and timely interventions to deal with complex financial decisions (Stadler, Helfat and Verona, 2013), and to respond to emergent challenges competently and rapidly.

Financial education for entrepreneurs, mitigates information asymmetry, reduces monitoring costs, improves capital flows (Hussain and Matlay, 2007) and empowers owners/ managers to improve an enterprise's financial well-being (Lusardi and Mitchell, 2007; 2014). Financial literacy in the context of enterprise, is more specific. The owner/manager has to understand, analyse and make financial decisions (Lusardi and Mitchell, 2014), which have an impact on SME performance (Eniola and Entebang, 2015). Financial literacy could be external and internal; regarding the external, the suggestion from the literature (Lusardi 2012; Hung *et al.,* 2009) is that financial literacy is more than the acquisition of financial knowledge; it is the ability of managers to use basic financial knowledge in conjunction with wider skill sets, networks, communication and cognitive skills to achieve the desired objectives (Wise, 2013). On the other hand, internal financial literacy assists owners/managers to optimise the use of scarce resources by efficient and effective financial management systems. Furthermore, financial literacy could enable owners/managers to be more creative in the use of credit and debt, the monitoring of budgets, the timely acquisition of raw material, production, fixed and variable costs and stock usage (Reich and Berman, 2015; Adomako *et al.,* 2016). A combination of internal and external literacy has been reported to have a high correlation with the business performance of young entrepreneurs (Bruhn and Zia, 2011) and similar findings are supported by (Agbemava *et al.*, 2016; Sucuahi, 2013).

The preceding literature supports the assertion that there is a relationship between financial literacy, the management skills of entrepreneurs and the competitiveness of the economy (Wise, 2013; Binks *et al.,* 2006). Therefore, over the recent past, there has been an upsurge in studies which have identified the need for financial education and literacy amongst SMEs (Fatoki, 2014; Wise, 2013; Hussain *et al.,* 2008; Binks *et al.,* 2006). One of the explanations offered by banks in the UK for the higher rejection rate of loan applications by SMEs is the poor preparation and provision of financial information to allow for adequate risk assessment due to information asymmetry that involves a higher diligence and monitoring cost (Deakin and Hussain, 1994). To mitigate information asymmetry, Deakins and Hussain (1994) and; Holmstrom and Tirole (1997) reported that lenders seek disproportionate collateral and make higher charges for the loan. Wise (2013) suggested SMEs with financial literacy enable owners/managers to embed good financial practices and to develop systems to record, analyse and produce management and financial information that aids efficient operation and decision making to enhance the capabilities of enterprise to induce a higher and faster growth. Better monitoring of cash flow improves firms' access to finance and reduces default (Kotze and Smit, 2008), leaving owners to focus on business operations to improve firm performance (Burhan and Zia, 2011)

Rapidly changing financial scenarios, complex interlinked global financial markets, the regular occurrence of financial crises, bankruptcy and debt crisis makes it essential for entrepreneurs to have financial management competencies. Financial literacy is a pre-requisite to respond to global challenges such as Brexit and the Global financial crisis of 2008/9 that offered firms export - with lower sterling values against the euro – opportunities, and challenges, if importing (Reich and Berman 2015; Cowling *et al.,* 2016). The failure of SMEs to provide adequate information for risk assessment to evaluate whether the management has the capability to manage fallout from the crisis, meant that access to external funds was reduced; this lead to among other things increased loan charges and collateral requirements (Helfat *et al.,* 2007; Engelen *et al.*, 2014). Successive studies (Cole, Sampson and Zia 2009; Deakins and Hussain, 1994) of SMEs suggest that financial literacy enables owners/managers to secure external finances.

There has been extensive research carried out, in the UK and internationally, that has examined how lack of access to finance constrains inception, growth, performance and the competitiveness of the UK economy (Johnson *et al.,* 2007). However, despite that, the focus on financial literacy and information management and their impact on lenders' decision making remains relatively under explored even though it has been recognised by practitioners and policy makers, world over, that effective financial management and optimal financial structures are critical factors for business success. Given the level of importance for SMEs, it is important to examine analytically, the role of financial literacy amongst managers and decision makers. Traditionally, relationship banking within the UK implicitly recognised the importance of management capabilities in terms of knowledge of finance and management. However, over the last two decades in order to overcome financial risk, regional bias and human subjectivity, lending institutions have adapted a transactional quantitative risk assessment (Ma, Ansell and Andreeva, 2016). This methodology does not necessarily capture the wider managerial attributes nor the knowledge and the role that financial information play.

Accounting theory and practice traditionally focused on the normative approach that tended to explain conduct and behaviour amongst large firms (Collis and Jarvis, 2002). However, the traditional approaches often failed to examine the challenges faced by SMEs, especially growth orientated ones (Armstrong *et al.,* 2013). Essentially, issues relating to access to finance for SMEs are not new, in the UK these can be traced back to the MacMillan report of 1931 and the same point has been re-enforced by the Bolton (1971), Wilson (1980) and more recently Rowlands (2009). It has also been acknowledged (Adamoka, 2016; Zarook *et al.,* 2013; Nayak and Greenfield 1994; Deakins and Hussain, 1994) that SMEs lack financial management skills, which gives rise to asymmetric information when providing financial information to external lenders, hence this give rise to a 'financial literacy gap'. Financial literacy and financial management skills are a pre-requisite to effectively plan the enterprise, to demonstrate its viability and for its projected potential to be realised. Financial information is the basis for lenders to evaluate projects so as to make lending decisions and financial literacy assists in the preparation of timely, useable financial information assist SMEs' owners and stakeholders, including external lenders, to arrive at an informed decision (Van Auken and Carraher, 2013). Consequently, understanding the properties of financial literacy amongst owner managers and how it impacts on SMEs' performance and growth has significant implications for researchers, policy makers and practitioners.

Financial decisions arrived at without adequately evaluating financial consequences could negatively impact on a firm's mission, financial structure, operations and give rise to financial distress (Horngren *et al.,* 2009; Timmons and Spinelli, 2004). Van Praag (2003) suggests that poor decisions are the consequence of poor financial literacy and management that often give rise to high failure rates amongst SMEs. This assertion is backed by Breen *et al.,* (2004) who suggested that firms should use financial information to evaluate the impact of their decisions; this is further supported by Shields (2010), who considered the effective use of financial information and concluded that financial literacy is essential for the efficient operation of a business. Effective use of financial information is dependent upon financial literacy, objectivity and the prudence of the owner.

Entrepreneurs are generally involved with multiple tasks, of which financial literacy and management are two important considerations. Financial literacy skills are an essential management resource to promote employment creation and economic growth amongst SMEs (Hastings *et al.,* 2013). In the absence of financial literacy and financial management skills, often SMEs limit their ability to undertake a rationale analysis of the business or to adequately assess viable options, giving rise to financial distress and business failure (Smith, 2011).

This paper aims to study the presence of financial literacy amongst owners/managers and how it is used for decision-making. Secondly, the paper specifically studies the relationship between financial literacy, financial management practices and how owners evaluate the role of financial literacy in the sample. Thirdly, it evaluates the experiences of SME owners/managers in the preparation and communication of information to secure external funds. Finally, the paper discusses the findings from 37 respondents amongst small and medium firms in the UK to identify pertinent issues for practitioners, researchers and policy makers.

The rest of the paper is organised as follows: the next section provides the theoretical overview of the topics and motivates the research questions. This is followed by a discussion of measures and the evaluation of the proposed hypothesis, and then the results of the paper are discussed. The paper is concluded with observation about the limitations and implications of the study.

Theoretical framework

Within the modern economic system, financial literacy is an essential skill and resource for SMEs to sustain competitiveness through innovation (Mason and Brown, 2013) and, to promote stability, employment (Anyadike-Danes *et al.,* 2013), and economic development for economies. To operate efficiently, SMEs require adequate debt and equity finance. It is recognized that there exists an 'equity gap' for SMEs (Brown and Lee, 2014), they pay higher loan charges (Deakins and Hussain, 1994; Hussain and Matlay, 2007) and require larger collateral (Hussain *et al.,* 2006; Story, 1994). This suggests there is limited knowledge amongst SMEs as to how financial literacy impacts on firms' access to finance, sustainability and growth. This study, proposes that financial literacy is a resource that has implications for start-ups, the survival and the growth of firms.

This is aligned with (Penrose, 1959; Werberfel, 1984) who suggest enterprise has a 'bundle of resources' and within that bundle, financial literacy is an enabling resource which manifests itself in terms of financial management, pricing and negotiating access to external finance. Within this context, access to finance and financial literacy is a sub-set bundle of resources (Song *et al.,* 2007) that if managed effectively, mitigate information asymmetry, monitoring costs and could reduce the need for collateral. Essentially, financial literacy increases the flow of capital for viable enterprises, improves efficiency, the competitiveness of firms and ultimately the economy. Financial return and growth (Levenson and Besley, 1996) are important incentives for entrepreneurs to take 'measured' risks. To maximize financial return, financial literacy enables entrepreneurs to exploit financial and commercial information to gain a competitive advantage.

To theories and motivate the hypothesis, figure 1 builds on (Emery and Flora, 2006) the idea of multiple capital. It is suggested that financial literacy is a potential resource that is a subset of a network of resources that enables firms to bear the stresses of economic environment and business cycles and assists them to innovate and grow. Within this context, hypothesis 1 proposes that financial literacy enables borrowers to provide timely and relevant information to enable lenders to analyze the resilience of SMEs when making lending decisions with or without collateral. Hypothesis 2 postulates that firms with financial literacy are better positioned to use optimum capital structures with better access to finance, developing strategies to make better use of resources, hence maximizing their growth potentials. Within this process, financial literacy informs consumers' choices, SMEs' consumption and investment behavior, and by implication, it impacts on the wellbeing of society (Lusardi and Mitchell, 2014).

The conceptual model, figure 1, presents the relationship between education, financial literacy, asset accumulation, access to external finance and a firm's growth. The interconnectedness between financial literacy, access to finance and a firm's growth leads one, using deductive reasoning, to conclude that financial literacy is a resource and it positively impacts on a firm's access to debt finance and growth. Based on the discussion above, the following hypotheses are proposed:

Hypothesis 1 = Financial literacy positively impacts on firm's access to finance

Hypothesis 2 = Financial literacy positively impacts on firm's growth

Insert Fig 1

Research method

Context

In addition to economic importance, SMEs contribute towards the social structure and economic competitiveness (Henrekson and Johnsson, 2010), that supports local and national societal cohesion. Small businesses in the UK complement large industry in the manufacturing, retail and leisure sectors. However, changing patterns in industry and commerce the world over has led to major changes for the SME sector. Technological advances and the internet revolution has led to the decline of traditional high street businesses, products and services. In response, the banking sector has also gone through a restructuring that has impacted on its traditional lending practices. The decline of relational banking and the introduction of technology and credit scoring means banks' decisions are ever more financial information dependent. Within this context, financial literacy gains ever more importance, including the use of timely and accurate financial information to mitigate the effects of information asymmetry. This change has elevated the role of financial information and financial literacy for entrepreneurs, policy makers and practitioners.

Research approach

To conduct an empirically rigorous study that examines the relationship between, financial literacy, access to finance and firm growth for firms in the UK, mixed/qualitative methodologies are chosen to explore whether financial literacy moderates information asymmetry and mitigates collateral deficit and the risk of failure embodied within SMEs. For this purpose, a semi-structured questionnaire was developed, piloted and implemented face to face by researchers within the West Midlands, UK. The qualitative approach has been tested and used within the UK and internationally to research SMEs' access to finance (Binks and Ennew, 1997; Becchetti and Trovato, 2002; Van and Carraher, 2013; Hussain *et al.,* 2006; Pallegedara, 2017). To be assured that we reached the near truth, questionnaires were continued until a saturation point was reached. This approach is aligned with grounded theory that involves the collection and analysis of qualitative data using analytics codes and categories based on pre-existing concretization and derived from the data (Charmaz, 2006).

Based on the literature, the authors firstly employed a micro-ethnographic approach to examine SMEs' financial structure, approaches used to access finance, and also examined their educational and entrepreneurial traits before developing a semi-structured questionnaire. For this purpose, 4 informal interviews and explorative discussions were held with SME owners and a thematic map was generated before developing a semi-structured questionnaire. To corroborate themes, the questionnaire was piloted with 5 owner managers and amended before it was administered with the owners/managers as the key respondents. The final questionnaire comprised of two sections: (1) owner, personal, educational and financial information. In the first part of the questionnaire we asked the respondents about the characteristics of their business, including age, financial information, education, gender. The second section focused on management education, financial literacy (measured in terms of their understanding and awareness of key financial terms) and the preparation of financial information. This was followed by questions relating to the use of financial statements when making management and financial decisions, and whether financial information was used to evaluate financial risk. To measure the growth of firms, having gained the confidence of the respondents, the final section asked owners/managers about the debt, equity and turnover figures to estimate issues related to access to finance and their growth.

Variables

To examine the impact of financial literacy on access to finance and firm growth, this study, in addition to control variables such as firm size, firm age, industry type, entrepreneurs' age, education and experience, used duration as a proxy for experience. Therefore, the variables' mean and standard deviations were used to examine their dispersion to infer conclusion. The approach used partially uses quantitative questions to gather basic data but to gain an understanding of subjective measures, the study relies more on qualitative responses to infer the relationship between financial literacy and the growth of firms. The first variable, growth, is a subjective variable and often proxy variables are used for this purpose. However, for this study we used turnover (quantitative) a proxy for firm's growth. For this study, we only considered firms which have operated for equal to or longer than five years in order to gain a fair reflection of their experiences.

The second variable, financial literacy, often used interchangeably with financial knowledge, (Huston, 2010) is rather challenging to define due to the complexity of financial education and the variables involved. In the US, The President's Advisory Council on Financial Literacy (PACFL, 2008) defines financial literacy as "the ability to use knowledge and skills to manage financial resources effectively". For the purpose of this study, financial literacy is defined as the skills required to make financial decisions (Moor, 2003) and an understanding of key financial terms (Mitchell and Lusardi, 2015). To capture financial literacy skills, owners were asked, whether they could prepare monthly income, expenditure and balance statements; review and use monthly statements to make strategic decisions; carry out a monthly financial analysis of monthly financial statements and whether they understood ratios and their use to make management decisions. This approach is broadly consistent with (Adomaka *et al.,* 2016; Dahmen and Rodr'guez, 2014). To capture information, an average of five - scale point measures are used to assess the owner's level of financial literacy. The third, a subjective variable, access to finance, was estimated by asking owners face-to-face questions and for them to indicate on a scale of one to five, the ease with which their company can access finance, one being strongly agree to 5 being strongly disagree.

Sample

Using the purposive sampling technique, the sample frame of (37) small and medium size enterprises mainly from the city of Birmingham and the joining conurbations: Sandwell (7) Dudley (5), Wolverhampton (4) and Birmingham (21) was obtained. The choice was made on the basis that the boundaries of these conurbations overlap in terms of geographical spread. A total of 112 SMEs were approached through letters, followed by phone calls but only 17 (15%) indicated a willingness to take part and 26 were recruited through contacts (snowballing approach) or the recommendations of the 17 respondents interviewed. Out of 43 interviewed, 6 respondents' questionnaires were not usable due to incompleteness of answers. Consistent with the suggestion of Boso, Story and Cadogan (2013) care was taken to ensure questionnaires were completed by only the owners/managers in the sample; since the owners are the decision makers and it is their financial literacy that influence the strategy and behavior of enterprise (O'Regan and Sims, 2008). To check for the response bias among the completed questionnaires, those who consented (17) and those who were recruited through recommendations (20), their responses were compared and no significant variations in the respective samples were observed.

At the time of administering the semi-structured questionnaire, the conversation and responses of the respondents were electronically recorded, transcribed, coded and content-analysed thematically to infer reasoned conclusions. The quantitative elements of the responses were coded, checked and processed using SPSS spreadsheet and analysis was carried out. Logic checks of responses were carried out and illogical responses were excluded from the data set. Furthermore, data validity was checked using four criteria: credibility, dependability, transferability and confirmability.

Results and discussion

The preliminary results for the study, based on a 33 percent response rate, have highlighted several findings. The main findings are briefly described below.

Insert table 1

Owner/manager characteristics

The owners' age analysis of the research sample (see table I) showed that 76 percent of the respondents engaged within SMEs were positioned between the age of 30-49, a higher proportion than reported in earlier studies (Binks *et al.,* 2006; Hussain and Matlay, 2006), indicating the inability of the younger generation to enter self-employment; and the figures for less than 30 and above 50 years' age were 16 and 11 percent respectively.

The longevity of the businesses in the sample was measured in terms of economic active years and only firms with an age greater than 5 years were included. In total, 68 percent of the businesses were between the age of 5-9 years, 27 percent between the age of 10-14 years and the lowest proportion, 5 percent of SMEs were with a duration of longer than 15 -19 years. One interpretation for such data could be that either SMEs exit through growth or churnout (failure) from this category. However, this study has no data regarding the churn out (failure) or exit from self-employed entrepreneurs due to inability of researchers to access such cases. The proportion of males and females in the sample were 89 and 11 percent, respectively.

There were 24 percent of the respondents with vocational qualifications, 59 percent with secondary education, 11 percent had degrees and 5 percent with postgraduate qualifications in the sample. The major observable figure is the lower proportion of business owners with vocational qualifications and the higher level of participants with secondary schooling. However, these figures may change in the future with the government's emphasis on apprenticeships in the UK. Interestingly, the undergraduate category with 11 percent is low when compared with the number of undergraduates going through Higher Education in the UK over the last several decades. This may suggest an increasing number of graduates become 'job seekers' rather than pursue entrepreneurial careers to become 'job creators'. The authors posit that these findings support the UK government apprenticeship initiative, not only, will apprenticeship overcome the skill shortages but the initiative may lead to more start-ups. A pull towards self-employment leading to the creation of a more innovative entrepreneurial culture. The ensuing change in government policy relating to apprenticeship suggests, there is a need for an in-depth and longitudinal research to examine the impact of qualifications, financial literacy, age and gender to infer a relationship between education, socio-economic factors and the choice to pursue enterprise.

Business characteristics

Not surprisingly, the structural changes within the UK economy has meant that retail and finance are the dominant sectors with a 41 and 35 percent share respectively. The remaining 24 percent of SMEs were divided between manufacturing, 16 percent, and electronics sectors, 8 percent. In terms of employment based on the European classification, in the sample, 24 percent of owners operated micro enterprises, with employees between 1-9, 50 percent, small, with employees between 10-49, and 16 percent medium with 50-249 employees.

The survey also indicated that the majority of businesses in the sample, 70 percent, have an annual turnover of between £100- £250k whereas 16 percent of businesses had a turnover of less than £100k and 14 percent between £250k-£500k. The latter included businesses with an age of greater than 10 years, which among other things suggests that larger turnovers tend to come from SMEs that have lasted a long time in the market. This may imply that the SMEs with a longer operating age may have adopted strategies and processes that have enabled them to sustain and grow their businesses.

When considering a generalization of the result, caution is suggested since the sample size is only 37, it is selective in terms of age of business and the region; the sample is not a random representation of the UK population. To be able to generalize results, a larger sample size would assist to contextualize financial literacy, access to finance and the growth of firms.

Financial literacy and access to external finance

To analyse and capture financial literacy amongst the participants in the sample, their knowledge was tested by enquiring whether a) they are familiar with financial terms, (an approach used by Mitchell and Lusardi, 2015), b) they have used financial techniques to make business decisions and c) they have used financial knowledge and skills to negotiate access to finance. Table 2 presents the results of the participants who were asked whether they had knowledge, understanding and have used financial skills to manage or negotiate when seeking external finance. Although the sample size is small and a generalization is cautioned, it has however, been observed, as educational level increases, the owners' engagement with financial skills (proxy for financial literacy) increases. Although the sample is not random nor is the sample large it is still striking to note that graduate entrepreneurs are disproportionately small in numbers, confirming the results reported above. This suggests again that take up of higher education serves to discourage self-employment, and prepares graduates to become job seekers, despite the fact that they possess higher financial literacy. This finding has implications for policy makers and the higher education sector to re-examine its approach and entrepreneurial education so as to foster entrepreneurship rather than creating job seekers.

Insert Table 2

Analysis of table 2 suggests that the respondents are familiar with the most used financial terms; Balance Sheet, 81 percent, Profit and Loss Account, 78 percent, Cash Flow Forecast, 86 percent and, profitability ratios, 78 percent. However, complex financial terms lack wider familiarity. Profit and Loss, 84 percent, Cash Flow Forecast, 92 percent, Balance Sheet, 68 percent are the key information terms used to inform entrepreneurs' financial negotiations. Whereas overdraft, profitability and gearing rations are the main tools used to manage internal business operations. A similar approach is observed in the use of financial information when negotiating external finance.

The literature cited (Carbó-Valverde *et al.,* 2016) supports the assertion that financial literacy provides a greater awareness of the different sources of finance that assist SMEs to identify and prepare a case for the right source of finance. To this end table 3 analyses familiarity and understanding of financial vocabulary amongst SME owners and managers, and examines how this then impacts on their success in operating the business and in negotiating external debt. An examination of the statistical data reported in table 3, demonstrated a lack of understanding and familiarity of the core terms (proxy for financial literacy). Lack of familiarity with the terms securitization and leasing represented with higher mean and standard deviation, which is expected given the nature of the financial products. However, a higher variability in the understanding of the terms, activity ratio, cash flow forecast and gearing, demonstrated greater variability in the understanding of the core financial terms. Consequently, this raises questions about owners'/managers' ability to prepare and present a coherent case to external finance providers. The variability in the understanding of financial vocabulary suggests an absence of financial literacy, owners/managers may not choose the right type of finance, thus having implications for liquidity and tax calculations, leaving SMEs to operate with inefficient and sub-optimal capital structures (without the tax advantage). Overall, table 3 supports earlier findings (Brown and Lee, 2014; Deakins and Hussain, 1994) in that there is an overwhelming compelling case that financial literacy amongst SMEs could enhance business operations and improve access to external finance, as shown in the next sub-section (in table 4).

Insert Table 3

Financial literacy, access to finance and firm growth.

There is a plethora of literature that reports on the funding gap for SMEs (Husain *et al.,* 2006; Blackburn and Ram, 2006; Stanworth and Purdy, 2004). However, the link between financial literacy and access to finance for SMEs is complex and mixed and the studies limited. As discussed earlier, financial literacy is a resource that enables entrepreneurs to make strategic investment decisions. Entrepreneurs with well-equipped business skills and financial literacy knowledge make superior financial decisions, leading to informed resource allocation decisions (Drexler, Fischer and Schoar, 2014; Hogarth, Beverly and Hilgert, 2003). Furthermore, financial literacy moderates the information gap (Adomak *et al.,* 2016), improves financial management practices that positively impact on firms' credit worthiness, that in turn enables a firm to improve its performance (Van Rooji, Lusardi and Alessie, 2011) and reduce credit cost. The beneficial properties of financial literacy, therefore are that it moderates information asymmetry and has a positive impact on firms' access to finance and growth. To gauge the familiarity of financial literacy amongst owners/mangers of SMEs, the Likert scale was used, results are presented in table 3. The rank order in table 3, suggests there is limited understanding and familiarity with complex terms, such as securitization. Terms such as Balance Sheet, Profit and Loss, and Ratios exhibited greater familiarity. However, the size of standard deviation indicates that for some owners, these terms were not understood. (Scoring 5 in some cases).

To study whether financial literacy positively compensated information asymmetry and impacted on SME's growth, each owner was asked to state at what level they considered a positive impact on their firm's growth on a scale of 1 to 5. The analysis of the responses supports the assertion that the owners of SMEs observed a positive correlation between financial literacy, firm growth and access to finance. The findings of the study suggest an understanding of financial statements, budgets and ratios assists in overcoming information asymmetry, leading to enhanced competitive advantage and economic efficiency.

Insert Table 4

Examining the effects of financial literacy on SMEs, table 4, the data analysis suggests that respondents see a positive relationship between financial literacy and a firm's growth and the same is the case for the relationship between financial literacy and access to finance. However, when considering the Balance Sheet, Profit and Loss Account, use of financial terms and ratio analysis, owners' responses had high variances.

Figure 2 corroborates the relationship between financial literacy, access to finance and firms' growth. The responses of variables in table 3, scores for access to finance and firms' growth are averaged and used as a proxy for financial literacy, access to finance and growth. The graph in figure 2 demonstrates a close co-movement between financial literacy, ease to access to finance and a firm's growth. Hence the finding offers support for H1 and H2.

Insert Figure 2

The results above support the policy recommendation for future research to focus on the mechanism and strategies to support embedding financial literacy provision within vocational, degree and secondary schools' curriculums to support owners/managers of SMEs to either access finance or to exploit growth potentials.

Conclusion, implications and limitations

In this paper, several issues surrounding access to finance were investigated. Analysis of the literature supports the view that SMEs with an adequate access to finance are more likely to experience growth. Yet the literature that examines the causal linkages and effects of financial literacy on firm growth remains under explored for the UK economy. The study builds on the Resource Based Theory of to examine whether financial literacy moderates information asymmetry and the collateral gap experienced by SMEs when seeking external finance, and its impact on firms' growth. Analysis of literature and theoretical exposition supports the suggestion that financial literacy employed as a package enables SMEs to access external finance; that in turn assists firms to operate at an optimum level to effect growth. This assertion is supported by Cole and Fernando (2008); they contend that financial literacy aids efficient business decisions to improve performance. Therefore, the relationship between financial literacy, access to finance and SMEs growth is an innovative one; it employs financial terms and statements as a proxy for financial literacy and intuitively theorizes the relationship between access to finance and frim growth.

The results of this study support the view that a financial literacy curriculum will enhance the effectiveness of SMEs to prepare financial information that in turn improves their capabilities to access external finance. These findings precede logically to the second hypothesis that financial literacy enhances access to finance and consequently the growth of the firm. The implications of our findings are that for a competitive economy, SMEs' owners/managers' financial literacy is not a luxury but rather a necessity that assists to moderate information asymmetry when firms' seek external debt. Therefore, managing the learning provision within formal educational institutions has the potential to positively harness the operational capabilities of the firm. The findings of the study suggest that policy makers, practitioners and academics must widen the research agenda to study the consequences of the finance gap for SMEs. Furthermore, there is a need to consider using a large sample to empirically test the relationship between financial literacy and firm growth for large and small firms.

In conclusion, although the concept of financial literacy has gained little traction in literature since little over a decade, it implications have been felt for several decades by owners of SMEs. Whilst the study provides new insights into the relationship between financial literacy, access to finance and the growth of firms, these findings suffer from some limitations. This study is based on a relatively small sample; therefore, we must be cautious when extrapolating generalized conclusions. SMEs in the sample are drawn from mixed industrial sectors; the generalized relationship extrapolated may not hold true for all sectors. To test the robustness of the results, future researchers may examine a larger sample set, sector by sector and consider data from other regions such as; Wales and Scotland. Nevertheless, this study expands the body of knowledge relating to financial literacy, access to finance and firm growth.

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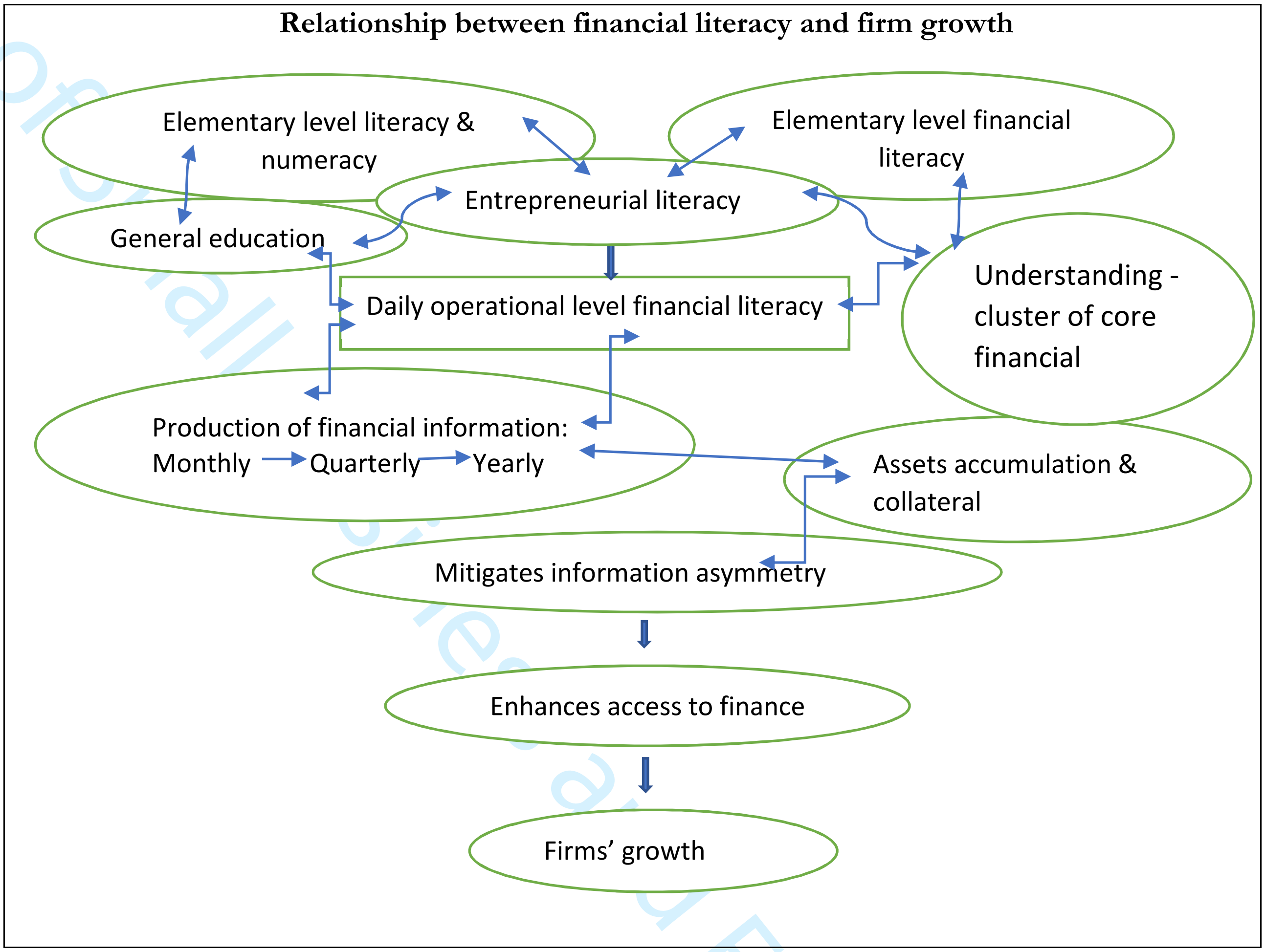

Figure 1: Conceptual model

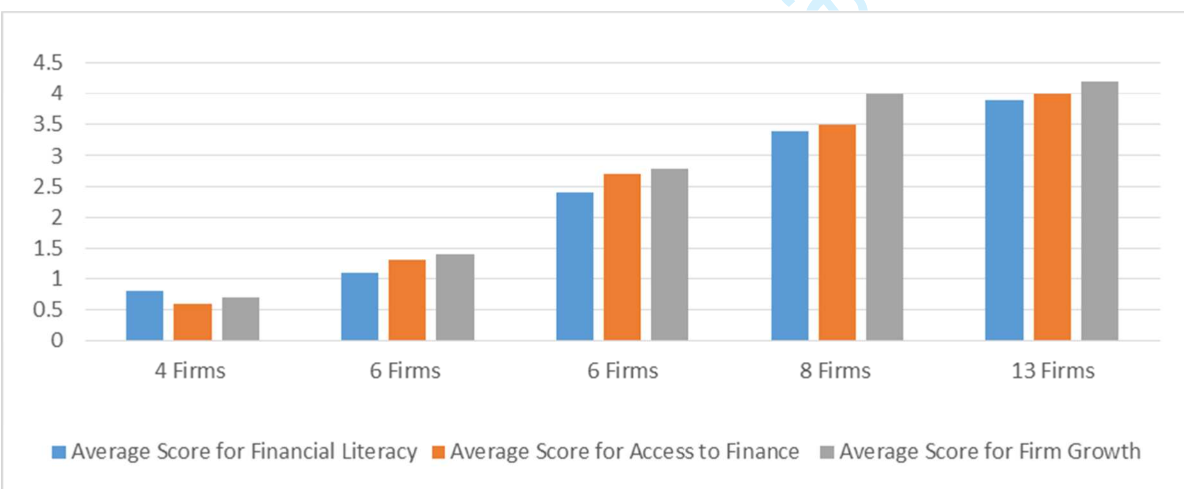

Figure 2: Financial literacy, access to finance and firm growth

Table 1: Characteristics of SMEs respondents

Owner's age	< 30	30 - 39	40 - 49	50+	Total
Number	5	23	5	4	37
Percentage (%)	14	62	14	11	100
Gender	Male	Female			
Number	33	4	-	-	37
Percentage (%)	89	11	-	-	100
Business age	5-9 years	10- 14 years	15-19 years	20+ years	
Number	25	10	2		37
Percentage (%)	68	27	5	-	100
Qualifications	Vocational	Secondary	Under Grads	Post Grads	
Number	9	22	4	2	37
Percentage (%)	24	59	11	5	100
Sectors	Retail	Personal/Financial services	Manufacturing	Construction/ Electronics	
Number	15	13	6	3	37
Percentage (%)	41	35	16	8	100
Employees	1–9 (micro)	10-49 (small)	50-249 medium)	250+ (large)	
Number (firm size)	9	22	6	-	37
Percentage (%)	24	59	16	-	100
Annual turnover	<£100K	Between £100k-£250K	Between £250k-£500K	Over £500K	
Number	6	26	5	0	37
	16	70	14	0	100

Table 2: ***Financial literacy for decision making***

	Balance Sheet	Profit & Loss Account	Cash Flow Forecast	Ratios				Financial vocabulary				
				Liquidity	Activity	Gearing	Profitability	Leasing	Securitization	Overdraft etc.	Total	Ranking
Qualifications												
Vocational	5	6	7	4	2	3	7	2	0	6	48	2
Secondary	19	17	18	12	9	13	20	6	4	18	152	1
Graduate	4	4	5	3	3	3	4	4	4	3	41	3
Postgraduate	2	2	2	1	1	2	1	1	2	2	18	4
Total	30	29	32	20	15	21	32	13	10	29	-	-
Financial terms											-	-
Familiar with terms (%)	81	78	86	54	41	57	86	35	27	78	-	-
Used to manage business (%)	68	84	92	46	32	65	76	22	5	95	-	-
Used to negotiate access to finance (%)	38	70	84	35	30	49	81	11	5	93	-	-

Table 3: Lack of familiarity and understanding of financial vocabulary

	Mean	**SD**	**Rank**
Securitization	4.67	0.459	1
Activity ratios	4.53	0.593	2
Leasing	4.11	0.235	3
Cash Flow Forecast	3.75	0.543	4
Gearing ratios	3.53	0.437	5
Overdraft etc.	3.51	0.512	6
Profit & Loss Account	3.15	0.971	7
Profitability	2.76	0.563	8
Balance Sheet	2.68	1.393	9
Liquidity ratios	2.43	0.942	10

Notes: A 5-point scale was used to collect data; score: 1, understand fully; 5, do not understand at all; 3, mid-point.

Table 4: Effect of financial literacy on SMEs

	Mean	SD	Rank
Impacted firm's growth	4.68	0.322	1
Impacted firm's access to finance	4.31	0.523	2
Understand & prepare periodic budget	4.18	0.576	3
Understand & use Balance Sheet	4.01	1.011	4
Understand & use P& L Account	3.97	1.051	5
Understand & use ratio analysis	3.37	0.982	6
Understand & use capital budgeting	3.21	0.421	7
Improved use of financial information	3.09	0.547	8
Understand & use financial terms	3.06	1.032	9
Improved cost efficiency	2.97	0.471	10
Improved planning	2.89	0.542	11
Improved knowledge	2.56	0.436	12
Improved competitive advantage	1.94	0.221	13

Notes: A 5-point scale was used to collect data. Score: 1, not important at all; 5, extremely Important; 3, mid-point